AMENDMENTS TO THE CLAIMS:

Claims 1 - 16. (Canceled)

Claim 17. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device comprising ~~steps of~~:

producing an emission layer comprising a multi quantum well structure (MQW) with well layers and barrier layers;; and

doping donor impurity alternately into said well layers and said barrier layers in a producing process of said multi quantum well structure.

Claim 18. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 17, further comprising ~~a step of~~:

producing a double-hetero junction structure in which said emission layer is sandwiched between adjacent layers.

Claim 19. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 18, wherein said emission layer comprises aluminum gallium indium nitride satisfying the formula $Al_xGa_yIn_{1-x-y}N$, inclusive of x=0, y=0, and x=y=0.

Claim 20. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 17, wherein an undoped layer is

formed between said layer doped with said acceptor impurity and said layer doped with said donor impurity.

Claim 21. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 20, wherein said undoped layer ~~having~~ comprises a thickness of from 50 Å to 500 Å.

Claim 22. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 17, wherein said acceptor impurity and said donor impurity are distributed into said emission layer by one of modulation doping and δ doping.

Claim 23. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 17, wherein said layer doped with said acceptor impurity and said layer doped with said donor impurity ~~are each from wherein said layer doped with said acceptor impurity and said layer doped with said donor impurity are each from~~ comprise a thickness in a range of 50 Å to 500 Å ~~in thickness~~.

Clam 24. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 17, wherein said emission layer is doped with a concentration of magnesium (Mg) ranging from $1 \times 10^{19}/cm^3$ to $1 \times 10^{21}/cm^3$ and exhibits p-type conduction.

Claim 25. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 17, wherein said acceptor impurity is selected from the group comprising cadmium (Cd), zinc (Zn), beryllium (Be), and calcium, (Ca).

Claim 26. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 17, wherein said donor impurity is selected from the group comprising silicon (Si), germanium (Ge), tellurium (Te), and sulfur (S).

Claim 27. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 17, wherein said layer doped with said acceptor layer comprises aluminum gallium indium nitride satisfying the formula $Al_xGa_yIn_{1-x-y}N$, inclusive of x=0, y=0, and x=y=0, and wherein said layer doped with said donor impurity comprises aluminum gallium indium nitride with a varied composition ratio of said formula.

Claim 28. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device comprising ~~steps of~~:

producing an emission layer comprising a quantum well (QW) structure having at least one well layer~~;~~; and

doping both an acceptor impurity and a donor impurity into said quantum well structure in a producing process of said quantum well structure in a producing process of said quantum well structure.

Claim 29. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said well layer is doped with both an acceptor impurity and a donor impurity.

Claim 30. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said well layer and a barrier layer of said emission layer are doped with both an acceptor impurity and a donor impurity.

Claim 31. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said emission layer ~~is~~ comprises an active layer comprising a zinc (Zn) and silicon (Si) doped indium aluminum gallium nitride (InAlGaN) compound.

Claim 32. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 29, wherein said quantum well (QW) structure comprises a barrier layer comprising an indium aluminum gallium nitride (InAlGaN) compound, having composition ratios different from said well layer.

Claim 33. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 32, wherein said composition ratios are designed to match a lattice constant of said barrier layer with a lattice constant of said well layer.

Claim 34. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said quantum well (QW) structure comprises said well layer sandwiched between barrier layers, said barrier layer being doped with an acceptor impurity.

Claim 35. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said well layer is from 50 Å to 200 Å in thickness.

Claim 36. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 32, wherein said barrier layer is from 50 Å to 200 Å in thickness.

Claim 37. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said emission layer having a quantum well (QW) structure comprises alternating $Al_{x2}Ga_{1-x2}N$ battier layers and $Al_{x1}Ga_{1-x1}N$ well layers, where $0 \leq x1 \leq 1$, $0 \leq x2 \leq 1$, and $x1 < x2$.

Claim 38. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 37, wherein said well layer is doped with both an acceptor impurity and a donor impurity.

Claim 39. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 37, wherein said well layer and said barrier layer are doped with both an acceptor impurity and a donor impurity.

Claim 40. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 37, wherein said quantum well (QW) structure comprises a multi quantum well (MQW) having a plurality of well layers, a first selected one of said well layers being doped with said acceptor impurity and a second selected one of said well layers being doped with said donor impurity, the first and second selected well layers being adjacent to each other.

Claim 41. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 37, wherein said well layer is doped with said acceptor impurity and said barrier layer is doped with said donor impurity.

Claim 42. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 41, wherein said well layer is doped with said donor impurity and said barrier layer is doped with said acceptor impurity.

Claim 43. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 41, wherein said acceptor impurity ~~is~~ comprises zinc (Zn) and said donor impurity ~~is~~ comprises silicon(Si).

Claim 44. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 37, wherein said emission layer is sandwiched between a p-layer comprising acceptor doped $Al_{x3}Ga_{1-x3}N$ with p-type conduction where $x1 \leq x3$ and an n-layer of a donor doped $Al_{x4}Ga_{1-x4}N$ with n-type conduction where $x1 \leq x4$.

Claim 45. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 44, wherein said acceptor impurity doped into said ~~player is~~ p-layer comprises magnesium (Mg) and said donor impurity doped into said n-layer ~~is~~ comprises silicon (Si).

Claim 46. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said quantum well (QW) structure comprises an $Al_{x1}Ga_{y1}In_{1-x1-y1}N$ well and an $Al_{x2}Ga_{y2}In_{1-x2-y2}N$ barrier, a band gap of said barrier being wider than a band gap of said well, and said barrier being doped with one of a donor impurity and an acceptor impurity.

Claim 47. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said quantum well (QW)

structure comprises an $Al_{x1}Ga_{y1}In_{1-x1-y1}N$ well and an $Al_{x2}Ga_{y2}In_{1-x2-y2}N$ barrier, a band gap of said barrier being wider than a band gap of said well, and said barrier being doped with one of a donor impurity and an acceptor impurity.

Claim 48. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 41, wherein said barrier comprises gallium nitride (GaN).

Claim 49. (Currently amended) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 41, wherein said donor impurity ~~is~~ comprises one of silicon (Si), tellurium (Te), sulfur (S), and selenium (Se) and said acceptor impurity ~~is~~ comprises one of magnesium (Mg) and zinc (Zn).

Claim 50. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 41, wherein said well is doped with an impurity concentration ranging from $1 \times 10^{17}/cm^3$ to $5 \times 10^{18}/cm^3$.

Claim 51. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 41, wherein a lattice constant of said well matches a lattice constant of said barrier.

Claim 52. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said well layer and said barrier layer are doped with both an acceptor impurity and a donor impurity .

Claim 53. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said quantum well (QW) structure comprises a multi quantum well (MQW) having a plurality of well layers, a first selected one of said well layers being doped with said acceptor impurity and a second selected one of said well layers being doped with said donor impurity, the first and second selected well layers being adjacent to each other.

Claim 54. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said well layer is doped with said acceptor impurity and said barrier layer is doped with said donor impurity.

Claim 55. (Original) A method for producing a group III nitride compound semiconductor light-emitting device according to claim 28, wherein said well layer is doped with said donor impurity and said barrier layer is doped with said acceptor impurity.